CLAIMS:

1. An image processing apparatus for generating, when image data of motion picture is made r times in quantization coarseness upon increasing a quantizing parameter a predetermined unit amount, change amount data representative of the change amount of the quantizing parameter, the image processing apparatus comprising:

index data generating means for generating index data serving as an index of complexity of the image data; and

change amount data acquiring means for defining a corresponding relationship between the index data and the change amount data such that, when the index data becomes r times, the change amount data is increased the unit amount, and for acquiring the change amount data corresponding to the index data generated by the index data generating means.

2. An image processing apparatus according to claim 1, further comprising quantizing parameter generating means for generating the quantizing parameter based on reference data defined based on a code amount assigned to the image data as a subject of coding and of the change amount data acquired by the change amount data acquiring means.

3. An image processing apparatus according to claim 1, wherein the index data generating means computes, based on a plurality of second blocks as a unit defined within a first block of the image data, dispersion data representative of a dispersion of pixel data within the second block, and generates the index data by using a minimal one of the dispersion data among the dispersion data computed on the plurality of second blocks.

4. An image processing apparatus according to claim 3, wherein the index data generating means computes the dispersion data by cumulating values depending upon a difference between pixel data within the second block and a mean value of all pixel data within the second block.

5. An image processing apparatus according to claim 3, wherein the index data generating means computes the dispersion data based on the second block as a unit greater in size than a block serving as a unit of making an orthogonal transform on the image data.

6. An image processing apparatus according to claim 1, wherein, when the image data is structured by a first field and a second field, the index data generating means generates the index data respectively on the first field and the second field, the change amount data acquiring means acquiring the change amount data on the respective first and second fields based on the index data generated by the index data generating means.

7. An image processing apparatus according to claim 3, wherein the index data generating means computes the dispersion data on the plurality of second blocks defined within a plurality of the first blocks when the image data is interlaced scanning image data.

8. An image processing apparatus according to claim 6, wherein the index data generating means computes the dispersion data on the plurality of second blocks including the second block corresponding to field coding and the second block corresponding to frame coding.

9. An image processing method for generating, when image data of motion picture is made r times in quantization coarseness upon increasing a quantizing parameter a predetermined unit amount, change amount data representative of the change amount of the quantizing parameter, the image processing method comprising:

a first process of generating index data serving as an index of complexity of the image data; and

a second process of defining a corresponding relationship between the index data and the change amount data such that, when the index data becomes r times, the change amount data is increased the unit amount, and of acquiring the change amount data corresponding to the index data generated in the first process.

10. An image processing method according to claim 9, further comprising a third process of generating the quantizing parameter based on reference data defined based on a code amount assigned to the image data as a subject of coding and of the change amount data acquired in the second process.

11. A coding apparatus comprising:

index data generating means for generating index data serving as an index of complexity of image data;

change amount data acquiring means for defining a corresponding relationship between the index data and the change amount data such that, when the index data becomes r times, the change amount data is increased the unit amount, and for acquiring the change amount data corresponding to the index data generated by the index data generating means;

quantizing parameter generating means for generating the quantizing parameter based on reference data defined based on a code amount assigned to the image data as a subject of coding and of the change amount data acquired by the change amount data acquiring means;

an orthogonal transform circuit for orthogonally transforming image data;

a quantizing circuit for quantizing image data orthogonally transformed by the orthogonal transform circuit;

a quantizing control circuit for controlling quantization by the quantizing circuit such that quantization coarseness is made r times as the quantizing parameter is increased a predetermined unit amount, based on the quantizing parameter generated by the quantizing parameter generating means;

a motion predicting/compensating circuit for generating reference image data and a motion vector, based on image data quantized by the quantizing circuit; and

a coding circuit for coding image data quantized by the quantizing circuit.

12. An image processing apparatus for generating, when image data of motion picture is made r times in quantization coarseness upon increasing a quantizing parameter a predetermined unit amount, change amount data representative of the change amount of the quantizing parameter, the image processing apparatus comprising:

an activity computing circuit to generate index data serving as an index of complexity of the image data; and

a ΔQ computing circuit to define a corresponding relationship between the index data and the change amount data such that, when the index data becomes r times, the change amount data is increased the unit amount, and to acquire the change amount data corresponding to the index data generated by the activity computing circuit.

13. An image processing apparatus according to claim 12, further comprising a quantizing parameter generator to generate the quantizing parameter based on reference data defined based on a code amount assigned to the image data as a subject of coding and of the change amount data acquired by the ΔQ computing circuit.

14. An image processing apparatus according to claim 12, wherein the activity computing circuit computes, based on a plurality of second blocks as a unit defined within a first block of the image data, dispersion data representative of a dispersion of pixel data within the second block, and generates the index data by using a minimal one of the dispersion data among the dispersion data computed on the plurality of second blocks.

15. An image processing apparatus according to claim 14, wherein the activity computing circuit computes the dispersion data by cumulating values depending upon a difference between pixel data within the second block and a mean value of all pixel data within the second block.

16. An image processing apparatus according to claim 14, wherein the activity computing circuit computes the dispersion data based on the second block as a unit greater in size than a block serving as a unit of making an orthogonal transform on the image data.

17. An image processing apparatus according to claim 12, wherein, when the image data is structured by a first field and a second field, the activity computing circuit generates the index data respectively on the first field and the second field, the ΔQ computing circuit acquiring the change amount data on the respective first and second fields based on the index data generated by the activity computing circuit.

18. An image processing apparatus according to claim 14, wherein the activity computing circuit computes the dispersion data on the plurality of second blocks defined within a plurality of the first blocks when the image data is interlaced scanning image data.

19. An image processing apparatus according to claim 17, wherein the activity computing circuit computes the dispersion data on the plurality of second blocks including the second block corresponding to field coding and the second block corresponding to frame coding.

20. A coding apparatus comprising:

an activity computing circuit to generate index data serving as an index of complexity of image data;

a ΔQ computing circuit to define a corresponding relationship between the index data and the change amount data such that, when the index data becomes r times, the change amount data is increased the unit amount, and to acquire the change amount data corresponding to the index data generated by the activity computing circuit;

a quantizing parameter generator to generate the quantizing parameter based on reference data defined based on a code amount assigned to the image data as a subject of coding and of the change amount data acquired by the ΔQ computing circuit;

an orthogonal transform circuit for orthogonally transforming image data;

a quantizing circuit for quantizing image data orthogonally transformed by the orthogonal transform circuit;

a quantizing control circuit for controlling quantization by the quantizing circuit such that quantization coarseness is made r times as the quantizing parameter is increased a predetermined unit amount, based on the quantizing parameter generated by the quantizing parameter generator;

a motion predicting/compensating circuit for generating reference image data and a motion vector, based on image data quantized by the quantizing circuit; and

a coding circuit for coding image data quantized by the quantizing circuit.